

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: PAUL E. MILLER AND PAUL A. BOGDANS

For: ANTENNA WITH DIPOLE CONNECTOR

Serial No.: 10/711,903

Examiner: Tho Gia Phan

Filed: October 12, 2004

Group Art Unit: 2821

Atty. Docket: 71368-0069

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))	
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Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

RESPONSE TO OFFICE ACTION

This paper is responsive to the Office Action mailed December 12, 2005.
Applicant requests further consideration and examination in view of the following amendments and remarks:

Amendments to the Claims are reflected in the listing of claims that begins on page 2 of this paper.

Remarks begin on page 4 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An antenna assembly comprising a lower break assembly having a center fed transmission line within a conductive tube forming a lower portion of a dipole radiator, and an upper break assembly having a center-fed transmission line within at least one conductive tube forming an upper portion of a dipole radiator, the lower break assembly and upper break assembly being mutually connectable for connecting the transmission lines to each other at a junction, wherein the lower portion and upper portion, when joined, form one pole of a center-fed dipole radiator.
2. (Original) The antenna assembly of claim 1 wherein the feed point for the dipole radiator is disposed away from the junction.
3. (Original) The antenna assembly of claim 2 wherein the feed point for the dipole radiator is disposed away from the lower and upper portions.
4. (Original) The antenna assembly of claim 1 wherein the lower portion comprises a conductive sleeve and the upper portion comprises a conductive cylinder, and the conductive sleeve and the conductive cylinder form the one pole of the dipole radiator in the junction, when the junction is assembled.
5. (Original) A dipole antenna wherein at least a portion of one pole of the dipole is formed of two separable pieces, connectable to each other at a junction without significant signal loss through the junction.

6. (Currently Amended) The dipole antenna of claim 5 wherein the ~~one pole of the~~
~~dipole is formed of two separable pieces~~ has a center-fed transmission line.

7. (Original) The dipole antenna of claim 5 wherein the two poles are formed of
conductive tubes.

8. (Original) The dipole antenna of claim 5 wherein no feed point for the dipole antenna
is located at the junction.

9. (Original) The dipole antenna of claim 5 wherein no feed point for the dipole antenna
is located at the two separable pieces.

10. (New) The dipole antenna of claim 6 wherein the two poles are formed of
conductive tubes.

11. (New) The dipole antenna of claim 6 wherein no feed point for the dipole antenna is
located at the junction.

12. (New) The dipole antenna of claim 6 wherein no feed point for the dipole antenna is
located at the two separable pieces.

13. (New) The dipole antenna of claim 7 wherein no feed point for the dipole antenna is
located at the junction.

14. (New) The dipole antenna of claim 7 wherein no feed point for the dipole antenna is
located at the two separable pieces.

15. (New) The dipole antenna of claim 8 wherein no feed point for the dipole antenna is
located at the two separable pieces.

Remarks

Claims 1-9 were in the application as last examined. By the present amendment, claim 6 is amended and new claims 10-15 are added. No new matter is added by the present amendments. Applicants respectfully request further examination and consideration in light of the foregoing amendments and the following remarks.

Rejections under 35 U.S.C. § 102

Claims 5 and 6 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,249,261 to Solberg et al. The rejections are respectfully traversed.

In Solberg et al. each antenna element 284 is a dipole comprising a pair of collinear dipole verticals 202 with a short gap between them. (Col. 5, ll. 38-43). Thus, each vertical 202 is a separate pole of the dipole 284. The verticals 202 are mounted to opposite sides of a dipole coupling 206. It is apparent that each pole is integral and not two separable pieces as required in claim 5. Nothing in the Solberg et al. '261 patent teaches or suggests one of the poles being connectably separable without significant signal loss.

A claimed invention is not anticipated under §102 unless each and every element of the claimed invention is found in the prior art. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986). Given the lack of teaching in the Solberg et al. '261 patent about one of the poles having two pieces connectably separable from each other without significant signal loss, it cannot be said that the Solberg et al. '261 patent anticipates claim 5. And because the Solberg et al. '261 patent does not anticipate claim 5, it likewise does not anticipate claim 6 which depends from claim 5. Respectfully, the rejection should be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 7-9 stand rejected under 35 U.S.C. §103 (a) as being unpatentable over the Solberg et al. '261 patent in view of U.S. Patent No. 6,509,815 to Stolle. The rejections are respectfully traversed.

There is no motivation or suggestion in the references for making the alleged combination, and therefore it would not have been obvious to make the combination. The Solberg et al. '261 patent relates to making direction finding antennas invisible to radar. The Stolle '815 patent relates to output coupling devices for coaxial lines in single or multiband antennas. There is nothing in either reference to lead one ordinarily skilled in the art to the other. Moreover, the location of the feed points relative to the claimed junction has nothing to do with impedance matching as suggested by the Examiner.

More importantly, however, even if the alleged combination were proper or even tenable, it would still not reach the invention of claims 7-9, which depend from claim 5 and therefore require one of the poles having two pieces connectably separable from each other without significant signal loss. Nothing in the Solberg et al. '261 patent or in the Stolle '815 patent teaches or suggests this element of the claims. Therefore, the claims are patentable over the alleged combination.

The Examiner suggests that the Stolle '815 patent teaches no feed point at the junction or the two separable pieces, the feed point being at 46 in Fig. 1. In fact, Fig. 1 of the Stolle '815 patent shows antenna A comprising dipole halves 3'a, 3''a, each being a pole. A feed point for the antenna A is at the short circuit 11'a, 11''a between the two poles, fed by coaxial feed line 17. Antenna B is a similar construction and is fed by the same coaxial feed line 17 at a separate feed point. The point 46 is a connecting point of the feed line 17 to a coaxial spur line SL. (Col. 6, ll. 28-36) The Stolle '815 patent suggests conductive tubes for the poles of each dipole, separated from each other at the respective feed points. For all of these reasons, the rejection is untenable and should be withdrawn.

New claims

New claims 10-15 all depend directly or indirectly from claim 5 and are therefore patentable for the same reasons stated above.

Conclusion

In the absence of any other cited art, it is believed that all of the claims are now allowable and early notice of Allowability is respectfully requested. Any questions concerning the foregoing may be directed to the undersigned at 616-742-3513 or jeb@mcgarrybair.com.

Respectfully submitted,

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Dated: March 7, 2006

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